TELECOMMUNICATIONS AND RADIO ENGINEERING
CONTENTS FOR 1989

NUMBER 1

	Page English	Page Russian
PART 1		
TELECOMMUNICATIONS		
MULTICHANNEL WIRE COMMUNICATIONS		
A.V. Burchenko and A.E. Sedov: A Digital Multifrequency Code Receiver...	1	30
K.B. Ateyev, V.A. Breskin and S.G. Yatsenko: The Statistical Characteristics of Line Transitions at the Remote End in a Digital Transmission System.....	5	33
B.N. Malitskiy: An Optimal Algorithm for Generating a 3B2T-RBS Signal for Use in Subscriber Line Digital Transmission Systems.....	7	35
D'yerd' Reti: A Comparison of Telephone Signal Models for Evaluating Distortions in a Standard Digital Transmission Systems Coder with PCM.....	11	37
SIGNAL GENERATION AND CONVERSION		
A.L. Kozlov and A.V. Pestryakov: Analysis of the Dynamic Characteristics of Impulse PLL Systems Under Interruptions Conditions.....	14	40
A.D. Derviz and Ye. A. Shchuko: A Mathematical Model for Estimating the Electro-Optic Parameters of Matched Originals.....	20	45
A.I. Kordobovskiy: Efficiency and Stability of the Morse Code.....	24	48
COMMUNICATION CIRCUITS		
V.F. Chuprakov and V.V. Shitov: Temperature-Time Effects in Optical Fibers and Cables.....	26	50
L.S. Lutchenkov: Calculation of the Constructional Parameters of the Electrical Assembly of Communication Equipment.....	30	53
PART 2		
RADIO ENGINEERING		
ELECTRONICS CIRCUITS AND NETWORKS		
V.A. Batukhtin: Correlation Functions of Deterministic Minimum FSK Signals.....	35	3
V.N. Novosadov, G.I. Obidin and K.V. Valygina: A Method of Increasing Contrast Sensitivity in Television Systems.....	38	5
A.A. Lavrov: Detail in a Radar Surface Image with Doppler Filtering.....	41	8
V.V. Blatov: Anomalous Errors in Optimum Frequency Estimation.....	44	11
L.N. Stepanova and A.N. Ser'yeznov: Calculation of the Equivalent Inductance of an Impedance Converter Based on a *p-n-p-n* Two-Terminal Network.....	46	13
E.V. Bausk and I.B. Yakovkin: Short Delay Saw-Filters.....	49	16
V.A. Il'in, V.G. Mirovskiy, I.A. Semin and V.S. Etkin: Features of the Use of Gas-Discharge Noise Generators to Calibrate Broadband Microwave Radiometers.....	51	17

	Page English	Russian
S.P. Morozov and A.V. Khryunov: The Stationary Operating Conditions and Stabilizing Properties of Combined AFC and Power Control Systems.....	54	20
K.A. Semenov and E.V. Komissarov: Calculation of the Operating Parameters of a Narrowband Quartz Filter Using Circle Diagrams.....	57	22
Li Za Son: Cost Optimization of Radio Receiver Stages.....	58	23
A.N. Levterov, V.I. Krotov, Yu. N. Chernov and V.O. Sveshnikov: Analysis of the Performance of a Waveguide Oscillator with a Gunn Diode and a Varactor in Series.....	60	25
SIGNAL TRANSMISSION AND PROCESSING		
V.S. Babayan, T.V. Babkina, V.S. Butylkin, V.V. Grigor'yants and P.S. Fisher: The Space-Time Evolution of Picosecond Pulses in Optical Fibers.....	61	26
A.A. Abros'kin, V.P. Vakhrushev, V.V. Barlabanov and M.A. Khmelevskiy: Effect of the Nonideal Characteristics of a Discrete-Analog Matched Filter on the Noise Immunity of a Multistage FPSK Demodulator.....	64	29
A.S. Adzhemov and R.A. Khalidov: Determination of the Probability Distribution Law of Distortions in Asynchronous Digital Signal Transmission.....	67	32
A.M. Brikker and A.O. Gorbunov: The Effect of Methods for Processing Concurrent Observations on the Characteristics of Nonparametric Signal Detectors.....	71	35
F.E. Gertsenshteyn, P.F. Zakharov and A.F. Gurov: Numerical Processing of Resonance Curves.....	74	38
A.I. Silyutin and V.D. Dmitriyev: An Algorithm for Analyzing Nonlinear Distortions Based on a Modified Nonlinear-Current Method.....	76	40
Ye. I. Kliot, V.V. Bortnikov, B.N. Ilyasov and A.V. Romanov: The Noise Immunity of Quasi-Coherent Reception in Adaptive Radio Links with Optimal Frequency Switching.....	80	43
G.G. Moiseyeva: The Use of Large Quasi-Orthogonal Signal Systems in m-Tuple Data Transmission Systems.....	83	45
ANTENNA-WAVEGUIDE TECHNIQUES AND RADIOWAVE PROPAGATION		
V.A. Yatskevich and N.A. Kudryavtsev: An Active Logperiodic Antenna.....	87	49
V.A. Sledkov and K.L. Topanov: Loads for Integrated Microwave Lines.....	91	52
S.V. Vinogradov and V.B. Voskresenskiy: Low-Pass Microstrip Filters with Electrically-Tunable Characteristics.....	93	54
V.I. Ponomarenko and D.I. Mirovitskiy: Determination of the Parameters of Matching Layers in Multilayer Structures.....	97	58
V.A. Laktionov, A. Yu. Skovronskiy and V.B. Fortes: Frequency Correlation in a City Channel for Radiowave Propagation.....	100	61
V.M. Shkil': Wave Scattering by a Screened Louvre Grating with a Dielectric Insert.....	104	64
N.A. Volynets, V.I. Demidchik and D.S. Shirko: Numerical Investigation of the Electrodynamic Characteristics of Antenna Arrays Consisting of Thin-Wire Radiators of Arbitrary Geometry.....	108	68
RADIOOPTICAL METHODS AND DEVICES		
A.V. Marugin and A.V. Kharchev: The Effect of Power Supply Instability on the Radio-Frequency Noise Spectra of Laser Diodes.....	110	69
COMPUTERS AND MICROPROCESSORS IN RADIO ENGINEERING SYSTEMS		
A.V. Azyukin, V.I. Shapovalov and A.V. Shishlov: The Application of Computer Technology in Checking Reflector Antennas.....	113	72
M.G. Vitkov: A Program for Calculating the Parameters of Filters with Maximum Multiplicity of Transfer-Function Poles.....	115	74
The K1800 Series MPK Microprocessor System ICs.....	117	75
FOR THE ENGINEER		
V.V. Akindinov, I.V. Lishin and R.K. Sorokina: The Input Impedance of a Loop Antenna in a Semiconducting Isotropic Medium.....	118	79

	Page English	Russian
S.V. Melikhov and A.A. Titov: Negative Feedback in a Broadband Frequency Converter	119	80
Al' Khasaniye Khisham: Selection of the Time Constant of a Diode Detector	121	81
I.V. Abramzon: Highly Stable Quartz Resonators with Gap Excitation	123	83
D.V. Igumnov and G.P. Kostyunina: A High-Speed Voltage Converter	125	84

NUMBER 2

PART 1
TELCOMMUNICATIONS

FOR THE DESIGNER

B.V. Vorob'ev and K.A. Meshkovskiy: A Method for Determining the Viability of a Connection	1	12
G.A. Ptitsyn and A.G. Panova: An Estimate of the Viability of Traffic Systems	5	15

METHOD OF OPTIMIZATION

P.A. Yunakov and M.B. Ivanov: An Estimate of the Probability-Time Characteristics of Load Control Systems at the Common Signaling Channel Level	11	22
I.A. Manev: A Method for Minimizing the Number of Types of Interfaces During Joint Operation of Digital Electronic Automatic Telephone Stations with Analog Stations	15	25
A.S. Vasil'chenko, O.M. Vorob'yeva, M.A. Zharkov and I.I. Rogushin: Signal Delay during Digital Switching of a Broadband Channel in a Digital Network with Integration of Services	19	28
V.V. Shtager: Frequency-Signal Receivers in Digital Switching Stations	25	32

PROPAGATION OF ELECTROMAGNETIC WAVES

A.I. Kalinin and L.V. Nadenenko: Current Problems of the Propagation of Radiowaves in Line-of-Sight RRL	29	40
E.K. Sergiyenko: Calculation of the Attenuation of Ultrashort Waves in the Case of Diffraction Along Mountain Routes	35	45
P.N. Dagurov, A.S. Zayakhanov, A. Ye. Tsybikov and N.B. Chimitdorzhiye: An Investigation of the Distortions of the Polarization Parameters of a Centimeter-Wave Diffraction Field	40	49

PART 2
RADIO ENGINEERING

RADIO SYSTEMS

Yu. I. Zhodzishkiy: A Comparison of Radio Links Using Spread-Spectrum Signals Using the Criterion of the Maximum Guaranteed Noise Immunity	45	3
Ye. K. Tarygin and I.V. Fridlyand: Recording Additional Data Signals in Video Tape Recorders	48	5
M.D. Venediktov, L.V. Panova and A.L. Silayev: Probabilities of Symmetrical and Asymmetrical Combinations of Symbols of the Signal in Delta-Modulation Systems	50	7
A.S. Popov: Effect of Space-Parameter Estimation Accuracy on the Noise Immunity of the Reception of Several Binary Radio Signals	54	10

RADIOELECTRONIC CIRCUITS AND DEVICES

V.L. Muravchenko: Analysis of the Level of Parasitic Harmonics in Distributed Amplifiers	56	12

	Page English	Page Russian
V.V. Nikolayev and A.L. Asinovskiy: A Method of Determining the Output Signal Distortions and Spectrum from the Static Characteristics in Class-D Amplifiers	58	14
G.I. Mirskiy: A Controlled Decade Frequency Divider	61	17
Ye. Ye. Getmanova, A.N. Yermak and N.V. Lyapunov: Features of the Design of a Phase-Lock Automatic Frequency-Control Loop Using a Logic Pulse-Phase Detector	63	18
A.V. Grebennikov: A UHF Self-Excited Oscillator with Broad Electronic Frequency Tuning in a Nonuniform Line	66	21
V.L. Shper: Calculation of the "Hot Spot" Temperature in Power Thyristors	68	23
I.I. Smagin: The Design of a Stage with Emitter HF Correction	72	26
Yu. M. Bezborodov, N.I. Lelyukh and B.N. Severgin: A Two-Frequency Microwave Oscillator with Frequency Stabilization by Dielectric Resonators	74	27
Yu. V. Korchagin: Analysis of Operation of a Broadband Amplifier with a Mismatched Load	76	30
D.D. Ganziy, V.N. Ukhin and V.N. Shkalikov: The Design of a Transistor Power Amplifier	79	32
SIGNAL PROCESSING		
G.A. Borodin: Code Redundancy Which Provides Protection from Packet Errors	81	34
V.G. Kartashevskiy and D.D. Klovskiy: An Analysis of the Noise Immunity of the "Reception "As a Whole' with Element-by-Element Decision Taking" Algorithm	84	37
V.F. Komarovich, V.V. Nikitchenko and P.S. Vikhlyantsev: An Evaluation of the Space-Polarization Parameters of Radio Signals by a Simulation Method	88	41
V.I. Loginov and S.A. Markova: A Combination Frequency Nomogram — An Algorithmic Approach	92	43
Yu. A. Nikitin: The Spectra of Quasi-Uniform Pulse Sequences	96	47
I.S. Nugmanov: A Truncated Sequential Procedure for Signal Detection	99	50
V.A. Polyakov and R.G. Tolparev: An Estimate of the Effectiveness of a Modernized Nonparametric Detection Procedure	102	52
Yu. G. Bulychev and S.A. Pogonyshev: Quasi-Optimal Nonlinear Filtering Based on a Discrete Space-Frequency Fourier Transformation	105	55
ANTENNA-WAVEGUIDE TECHNIQUES AND RADIOWAVE PROPAGATION		
V.G. Kocherzhevskiy, N.L. Lazarov and V.V. Shkvarin: A Traveling-Wave Antenna with Near-Axial Radiation	108	58
Yu. A. Lazunin and O.S. Orolov: Second-Harmonic Generation in Cascade-Type Microwave Power Limiters	111	61
RADIOOPTICS		
V.E. Kirakosyants, V.A. Loginov and V.V. Slonov: The Accuracy of Evaluating the Wavefront of an Optical Signal	113	73
COMPUTERS AND MICROPROCESSORS IN RADIO ENGINEERING SYSTEMS		
B.E. Petrov and I.A. Romanov: Computer-Aided Synthesis of Broadband Matching Circuits for Microwave Transistor Amplifiers	117	77
I.K. Anisimov and Yu. N. Prokhorov: A Method for the Difference Coding of Noisy Voice Signals and Its Technical Implementation of a K1804 Microcomputer System	121	80
Microprocessor ICs-Reference Information the K1801 Series Microprocessor Chips	124	83
DESIGNER'S CORNER		
B.I. Petronenko, E.V. Bukanov and V. Ya. Androsenko: A Square-Wave Pulse Generator	126	89
S.V. Levinzon: Devices for Protecting Electric Power Supplies	129	91
A.G. Zharkoy: Calculation of Balanced Currents of Nonlinear Elements at Arbitrary Frequency Selections	133	95

Page
English Russian

NUMBER 3

PART 1
TELECOMMUNICATIONS

DIGITAL TECHNIQUES

G.A. Vointsev, V.I. Nosov and A.V. Kokorev: Determination of the Number of Frequency Channels for Constructing a Digital Radio Broadcasting Network..... 1 16
A.M. Aleksandr: A Digital Processing Algorithm for a Reduced High-Speed Response Signal in a SECAM Decoding Unit..... 6 19
R.M. Sharafutdinov: The Noise Immunity for the Reception of a Bipulse Signal with Spectral Separation of Digital Optical Signals..... 10 23
K.F. Astapkovich, V.A. Egorov, I.I. Zakharov and D.A. Kopylov: The Transmitter of a Signal Converter for a Digital Facsimile Unit..... 13 25
Ar.S. Adzhemov and R.A. Khalidov: An Evaluation of Distortions in the Period of Elements of a Digital Signal during Its Transmission by Asynchronous Methods..... 20 30
G.S. Gamidov, V.V. Panteleyev and S.G. Yatsenko: The UPS-64 Two-Wire Duplex Signal Converter with an Echo-Compensator..... 23 36
V.A. Kisel: Optimal Transfer Functions for Digital Preselectors, Shapers and Equalizers..... 28 40
V.V. Maslennikov and V.V. Meshcheryakov: A Comparison of the Sensitivities of Cascade and Connected-Cascade Active Low-Pass RC-Filters..... 34 44
Yu. A. Chernov and K.A. Troshkina: A Statistical Evaluation of Radio Broadcasting Decameter-Channel and Frequency-Band Loading..... 38 52

PART 2
RADIO ENGINEERING

ELECTRONIC CIRCUITS

D.A. Kopylov and S.I. Lopatin: An Algorithm for Discriminating Discrete Signals with Frequency-Shift Keying without Phase Discontinuity..... 45 3
V.I. Merkulov: The Stability of Radioelectronic Tracking Systems, Optimal with Respect to a Local Criterion, to Additive Interferences. 49 7
V.V. Prilepskiy: Nonlinear Conversions in Phase-Shift Keyed Signal Carrier Recovery Systems..... 52 9
A.P. Aleshkin and M.G. Stepanov: Determination of the Parameters Group Target Motion When There are Systematic Measurement Errors 55 12
V.G. Sokolinskiy: Effect of Imbalance of a Quadrature Network on the Spectrum of a Frequency-Shift Keyer with Minimum Shift..... 56 15
A.V. Khramov and G.V. Petrov: Measurement of the Scattering Parameters of Four-Terminal Networks under Large-Signal Conditions..... 59 18
V. Ya. Groshev: Methods for Ensuring Preciseness and Stability of Initial Conditions in Push-Pull Amplifiers Based on Bipolar Transistors..... 62 20
V.I. Gvozdev, Ye. D. Pozhidayev and V.A. Shchepetina: A Matched Load on a Rib-Dielectric Line..... 64 22
A.S. Kozlov, A.A. Kreymer and N.I. Tolstoukhov: A Matched Filter of Phase-Shift Keyed Signals Based on Surface Acoustic Waves with Reduced Losses..... 66 24
S.N. Bikkenin and S.M. Smol'skiy: A Comparison of the Dynamics of the Tuning of Two Systems of Locked Self-Excited Oscillators..... 68 25
V.G. Lyapunov and Yu. L. Khotuntsev: The Temperature Dependence of Intermodulation Distortions in Microwave Amplifiers with Bipolar Transistors..... 70 27
B.I. Shcherbakov: Effect of Auxiliary Oscillators on the Quality of Optimal Filtering..... 72 29

SIGNAL PROCESSING

M.N. Yatsimirskiy: Radix Two and Radix Four Fast Hartley Transform Algorithms..... 74 31

	Page English	Russian
F.M. Andreyev and V.L. Seletkov: Parametric Representation and Evaluation of Real Discrete Finite-Dimensional Signal Parameters.....	79	36
A.S. Kotousov and A.K. Morozov: Optimal Separation of Amplitude-Modulated Signals.....	83	39
M.P. Mus'yakov, V.N. Zhurakovskiy and O.K. Shanayev: Synthesis of Adaptive Recognition Algorithms with Short Learning Samples.....	86	43
O.B. Semenov: Nonlinear Distortions in the Digital Representation of Signals.....	90	46
V.V. Blatov, N.R. Balukova and I.S. Zabrodin: The Bias of Frequency Estimates for Various Estimating Methods.....	93	49
I.N. Okinshevich: Flow-Concordant Recursive Algorithms for Computing the Spectral Function of a Discrete Signal.....	95	51
ANTENNAS, WAVEGUIDES AND RADIO PROPAGATION		
G.A. Polukhin: Analysis of the Radiation Pattern of a Phased Antenna Array of Large-Aperture Modules.....	98	53
V.V. Kozlovskiy: Synthesis of Plane Layered Dielectric Waveguides on a Metal Substrate.....	101	55
A.S. Il'inskiy, A.A. Kurayev, A. Ya. Slepyan and G. Ya. Slepyan: Diffraction at the Junction of an Irregular Rectangular Waveguide.....	103	57
D.V. Blagoveshchenskiy: Prediction of High-Latitude Disturbances on Short-Wave Radio-Propagation Routes.....	105	59
A.P. Trifonov and S.V. Vetrov: Effectiveness of the Sequential Detection of Continuous Gravitational Radiation.....	109	62
V.M. Temnov, I.I. Postnikov and A. Ch. Kim: The Design of a Calorimetric Load in a Rectangular Waveguide Having a Bend in the H-Plane.....	112	65
RADIOOPTICAL TECHNIQUES AND DEVICES		
V.I. Shcherbak: The Design of Optimum Discriminators for Estimating the Parameters of Optical Signal.....	114	67
Yu. G. Vasil'yev: Effect of an Acoustooptic Switch on the Signal-to-Interference Radio in Fiber-Optic Data Transmission Channels.....	117	70
Yu. D. Dumarevskiy, N.F. Kovtonyuk and L.V. Medvedeva: Phase-Polarization Phenomena in Liquid Crystal MOS-Structures and Optical Systems Employing Such Structures.....	121	67
Yu. V. Vaysleyb, V.N. Goncharov and M.N. Kovachevich: Determination of the Effect of Photodetector Input Networks on the Characteristics of Narrowband Fiber-Optic Transmission Systems Employing Microwave Subcarriers.....	125	71
E.I. Kovrigin and E.E. Potylitsyn: An Experimental Comparison of Preamplifiers for High-Speed Photodiodes.....	128	73
COMPUTERS AND MICROPROCESSORS IN RADIO ENGINEERING SYSTEMS		
I.P. Norenkov, V.G. Fedorchuk and S.F. Chermoshentsev: The Solution of Electronic Circuit Design Problems using Logic Programming Methods..	132	76
V.A. Pospelov: The Analysis of Electronic Circuits with Delay using a Microcomputer.....	135	79
M.I. Maslov and V.V. Pavlov: Microprocessor ICs Reference Information...	137	80
FOR THE ENGINEER		
S.V. Ryabchikov and V.M. Pochter: Analysis of the Feasibility of Selecting Auxiliary Resistors in Hybrid Active Low-Pass Filters using Frequency-Dependent Feedback.....	140	86
A.N. Pospelov: A Harmonic Oscillator.....	142	87
A.S. Bogdanov, S.A. Drugov and Yu. I. Sudakov: A Transistor Oscillator with Load Separation.....	143	83
N.V. Shiyanov: Reduction in the Amplitude-Dependent Phase Shifts in Photoreceivers Based on Photomultipliers.....	146	85
A.A. Titov: The Design of the Dissipative Interstage Correcting Circuit of a Broadband Power Amplifier.....	149	88

	Page English	Russian
Yu. N. Novikov and F.A. Kopylov: Experience in Constructing a Microstrip Radiator Based on Experimental Data	152	91
LETTERS TO THE EDITOR		
V.V. Kashinov: Thirteen Questions on the Paper Entitled "Principles of the Construction of Radioelectronic Integrated Systems"	155	93
V.L. Koblov and M.S. Yarlykov: Answers to the Questions on the Paper Entitled "Principles of the Construction of Radioelectronic Integrated Systems"	156	94

NUMBER 4

PART 2
RADIO ENGINEERING

RADIO SYSTEMS		
Yu.V. Berezin, I.P. Korotkov and V.V. Starchenko: Determination of the Azimuthal Angle of Arrival of a Multibeam Field in an Ionospheric Communications Channel	1	3
I.S. Sorokevich: Coordinate Tying-In of a Television Picture in the Case of Remote Sensing of the Earth	5	7
I.V. Kovalev and M.A. Sokolov: An Evaluation of the Efficiency of Repeaters in Multichannel Communications Systems with Assignment of Demand Channels	7	9
G.N. Prokhladin: Transients in a PPAFC System with a Second-Order Filter	10	11
L.S. Vilenchik, A.N. Katulev, M.F. Malevinskiy and S.L. Popstov: Calculation of Prolate Spheroidal Wave Functions	14	14
G.M. Strelkov and I.V. Soldatova: Propagation of a Radio Pulse in the Absorption Band of Oxygen	16	16
RADIOELECTRONIC CIRCUITS AND DEVICES		
A.A. Dvornikov, M.V. Kapranov and G.M. Utkin: The Steady-State Conditions of an Ensemble of Self-Excited Oscillations Coupled Through a Phase-Locked Loop	18	19
L.Ye. Varakin: Noise Immunity and Efficiency of a Cellular Digital Radiotelephone	22	22
A.S. Anan'yev and S.N. Popov: Walsh Polynomials in Frequency Synthesizers	27	27
L.N. Kechiyev, L.V. Khabarova and M.A. Zima: Development of a Model of a Connector for High-Speed Equipment	30	29
M.I. Bocharov and O.P. Novozhilov: Frequency Division Using Synthesized Nonlinear Reactances	32	31
M.U. Bank and V.V. Nikolayev: A Digital Detector for an FM Stereophonic Receiver	36	34
N.V. Drozdovskiy and I.V. Lebedev: A Calculation of the Total Attenuation of Cascade-Connected Microwave Devices	38	36
N.A. Bol'shakov: An Estimate of the Mutual Suppression of Overlapping Spread-Spectrum Signals in a Digital Matched Filter	42	40
SIGNAL PROCESSING		
S.S. Poznyak: Bandwidth Optimization in an Adaptive RF Receiver	44	42
Yu.N. Gorbunov: Randomized Signal Processing in an MTS System with Ideal Input-Signal Limiting	49	45
T.P. Gryzlova: The Kramer-Rao Boundary in the Problem of Nonlinear Filtering of the Center Frequency of a Narrow-Band Random Process	50	48
G.M. Bashin and A.N. Dmitriyenko: Multialternative Detection of a Non-fluctuating Signal on a Gaussian Noise Background with Unknown Parameters	53	50

	Page English	Russian
V.I. Loginov: Optimization of the Parameters of a Frequency Converter....	55	51
D.G. Kozlov: Robust Processing of a Pseudo-Noise Signal in a Channel with ε-Impurity.....	56	52
ANTENNA-WAVEGUIDE TECHNIQUES AND RADIOWAVE PROPAGATION		
A.G. Davydov, Yu.V. Pimenov and N.V. Davydova: A Numerical-Asymptotic Calculation of Diffraction Fields.....	58	54
A.I. Smirnov: An Operative Calculation of Characteristics of Decameter Waves in a Longitudinally Graded Ionosphere.....	61	56
D.I. Mirovitskiy and V.M. Petrov: Self-Matched Absorption of Electromagnetic Waves by a Ferromagnetic Dielectric Layer.....	65	60
P.N. Dagurov, A.S. Zayakhanov, A.Ye. Tsibikov and N.B. Chimitdorzhiyev: Fluctuations of the Direction of the Main Maximum of a Transmitting Antenna Radiation Pattern Along Closed Surface Routes.....	67	62
RADIOOPTICAL METHODS AND DEVICES		
S.P. Gurdzhi and V.B. Katok: An Investigation of the Electrodynamic Characteristics of Single-Mode Fiber Lightguides with a Composite Refractive Index Profile.....	70	64
A.A. Bortsov, V.V. Grigor'yants and Yu.B. Il'in: Frequency Tuning in a Self-Excited Oscillator with a Fiber-Optic Delay Line.....	74	68
COMPUTERS AND MICROPROCESSORS IN RADIO ENGINEERING SYSTEMS		
V.P. Styts'ko and V.Z. Khaimov: A Memory IC "Quality Criterion" from the User Point of View.....	78	71
M.I. Maslov and V.V. Pavlov: Microprocessor ICs Reference Information....	81	73
DESIGN		
D.G. Asatryan: Decomposition of the Interference Formula in the Two-Antenna Method.....	83	76
V.K. Lipskiy and A.E. Moshinskiy: Broadband Matching of an Inductive Transducer to an Amplifier.....	85	77
V.N. Chibisov: Calculation of Communications Reliability in the Diversity Reception of Digital Data on Long-Range Short-Wave Radio Routes.....	87	80
A.L. Fabrikant: A Method of Increasing Adjacent Channel Selectivity in Receivers.....	91	82
A.E. Mal'tsev and A.V. Romanov: Investigation of a Ring-Type Amplitude Limiter.....	93	84
B.S. Sergeyev: Smoothing Filters for a Single-Cycle Converter.....	95	86
V.G. Lavrushenkov, G.V. Novikov and I.V. Chugunov: The Features of Using Balanced Envelope Feedback in Power Amplifiers.....	98	89
V.F. Veyatyshev: Structure of the Engineering Design Process and the Problem of Radio Engineer Training.....	101	91

NUMBER 5

PART 1
TELECOMMUNICATIONS

WIRE COMMUNICATIONS

D.D. Klovskiy, S.M. Shirokov and A. Yu. Sherman: Evaluation of the Transmission Characteristics of Digital Signals in Nonlinear Fiber-Optic Channels.....	1	7

RADIO BROADCASTING

M. Ya. Lesman, Yu. B. Okunev and L.M. Fink: Signal Formation Problems in Digital Radio Broadcasting Systems.....	6	31

	Page English	Russian
V.G. Dotolev, G.M. Kuz'kina, O.I. Sergeyev and A.T. Titov: Determination of the Number of SW Broadcasting Radio Stations Operating Simultaneously on a Single Frequency	10	34
A.A. Aleksanyan, V.A. Galakhov, Ye. M. Gamayunov, V.L. Mozheyko, and K.K. Nikitin: Feedback in Transmitters with Key Collector Modulators	14	37
ANTENNA-FEEDER DEVICES		
O.N. Tereshin, V.D. Dvurechenskiy and A. Yu. Fedotov: Synthesis of an Antenna Based on a "Ladder-Type" Line	20	42
Yu. V. Pimenov and A. V. Yampol'skiy: Increasing the Effectiveness of Dipole Antennas	24	45
B.M. Kats and V.P. Meshchanov: Super-Wideband Two-Channel Power Dividers	28	47
NETWORK THEORY		
P.P. Vorobiyenko: Use of Modified Chebyshev Polynomials in Filter Synthesis	31	50
M.G. Vitkov: Augmented Matrices of Linear Multiterminal Networks	36	53
V.I. Kapustyan, L.V. Bubnova and V.A. Zavedeyev: Sensitivity of Noncascade Active Filter Characteristics	41	57
PART 2		
RADIO ENGINEERING		
ELECTRONIC CIRCUITS AND DEVICES		
B.G. Barabashov and O.Yu. Pelevin: An Estimate of the Effectiveness of Interference-Error Averaging Algorithms of an Amplitude-Type Direction Finder	45	3
G.N. Anikeyenko and A.D. Kononov: An Estimate of the Mutual Influence of Polarization-Orthogonal Channels for Ionospheric Propagation of Signals	48	6
A.M. Bereznyy, Yu.D. Dumarevskiy, N.F. Kovtonyuk, A.N. Kozlov, V.S. Kolobkov, G.A. Petrovicheva, and S.S. Stepanov: A Pattern Recognition System Using Polar-Logarithmic Image Conversion	50	8
L.A. Ovcharenko and V.N. Poddubnyy: Noise Immunity of FSK-Signal Reception in the Presence of Radio-Station Interference	52	10
A.V. Abramov, A.V. Grechishchev, N.V. Zherikhin, I.A. Zheltikov, G.M. Levchenko, and A.A. Morozov: The Reflecting Properties of the Venusian Surface from the Radar Data of the Venera- 15 and -16 Automatic Interplanetary Stations	55	12
V.G. Bartenev and I.K. Pikayev: Analysis of the Effectiveness of Automatic Compensators with Directly Fed Correlation-Coefficient Estimates	59	18
V.A. Galkin: The Use of Pi- and Tee-Circuits in USW Active- and Reactive-Power Sensors	62	21
L.G. Gassanov, K.S. Sunduchkov, V.V. Galitsyn, A.P. Tuzenko, and Ye.P. Grinenko: A Centimeter-Wavelength Monolithic Low-Noise Transistor Amplifier	64	23
Yu.I. Sudakov and D.Ya. Nagornyy: High-Power Transistor LC-Self-Excited Oscillators Based on Phased Power Amplifiers	67	26
R.M. Matshin, R.D. Mukhamedyarov, and E.M. Bikulov: Approximation of the Amplitude-Frequency Characteristic of a Broadband Electric Filter	70	29
G.I. Fridman: Certain Features of the Operation of an Amplifier with Automatic Plate Modulation in SSB Transmitters	71	30
V.A. Pospelov: Calculation of the Frequency Characteristics of Active Filters in the High-Frequency	75	33
SIGNAL PROCESSING		
Yu.D. Bolmusov: FM Distortions of a Signal When It is Converted to a Pulse Train	77	35

	Page English	Russian
G.A. Akimova, V.V. Mataybayev, Yu.P. Syrykh, and A.V. Frolov: An Iterative Method of Solving the Phase Problem	80	38
V.V. Gorshkov: The Distribution of the Process at the Output of a Reversible Counter	83	41
V.Yu. Anisimov: Parameter Estimation in the Case of Fuzzy Information on the Observation Conditions	86	43
A.S. Popov, A.P. Rodimov, and V.I. Sazonov: Error Probability of the Correlation Reception of Three-Position PSK in the Presence of Synchronously Keyed Interference	88	45
A.M. Gladkiy: Effect of the Second Harmonic on the Amplitude and Phase of a Deterministic Signal	91	48
G.A. Sokolov: Resolution of Discrete Random Signals in the Case of Limited *a priori* Statistics	94	51
K.I. Kucherenko and Ye.F. Ochin: A Multihistogram Processor of the Rank Filtering of Images	98	54
V.M. Sovetov: The Use of Complex Signals Formed by Orthogonal Operators to Accelerate Locking	101	57
A.I. Tyazhev: The Spectra of Quantized and Sampled Periodic Signals	104	60
ANTENNA-WAVEGUIDE TECHNIQUES AND RADIOWAVE PROPAGATION		
T.A. Kolosova, V.I. Surkov, and A.N. Zhukova: Polarization Characteristics of an Antenna Array of Crossed Dipoles	109	64
Yu.K. Shestopalov: Incoherent Multiple-Wave Scattering by Statistically Irregular Surfaces with Large-Scale Irregularities	112	67
A.S. Afromeyev and I.A. Naumov: A Digital Adapted Phased Antenna System	115	70
A.M. Lerer, A.S. Tsyupko, and G.N. Shelamov: Waveguide-Slot Resonators with Metallization of Finite Thickness	117	72
RADIOOPTICAL METHODS AND DEVICES		
V.N. Myasnikov: A Method of Increasing Photoreceiver Speed of Response	120	75
K.B. Dedushenko and S.A. Yegorov: Spectrum-Modulation Characteristics of Injection Lasers with Selective Resonators for FOCL	123	78
A.A. Bliskavitskiy: A Procedure for the Experimental Evaluation of the Deviation of the Emission Frequency of a Laser Transmitter in an Analog FOCL	126	80
COMPUTERS AND MICROPROCESSORS IN RADIO SYSTEMS		
A.S. Belotserkovskiy and Yu.A. Evstifeev: The Realization of Effective Methods of Integration in the Analysis of Multiperiod Electronic Systems	128	82
A.K. Musolin, V.A. Nesov, and N.I. Tsukanova: A Multilevel Hierarchical Model for the Computer-Aided Selection of Power Supply System Structures	133	87
ENGINEERING DESIGN		
S.A. Kravchuk, S.A. Selivanov, and Yu.I. Yakimenko: A Planar SWF Bandpass Filter Based on Dielectric Resonators with Piezoelectric Frequency Tuning	137	93

NUMBER 6

PART 1
TELECOMMUNICATIONS

DOCUMENT TRANSMISSION

Yu. I. Prudkoi, N.I. Belikov, T.A. Krivets and I.L. Figurskaya: Probability of Call Loss in Telegraph Networks	1	25
P.I. Zhuk: Operational Reliability and Quality of Multiplexers	6	32

	Page English	Russian
V.A. Grebennikov: Questions of Unit Redundancy in Channel Switching Systems	11	35
TELEGRAPHY		
Functional Modules in Telegraph Multiplexers	15	38
K.F. Astapkovich, V.F. Buyanov, V.A. Zharenov, V.M. Nechaev, E.P. Perfil'ev and A.G. Podgayskiy: The UPS-9.6 Modem	15	38
S.P. Vol'fbeyn, K.S. Zhevlyuk, V.B. Korop, S.V. Litvinenko, Yu. P. Parkhomov, V.M. Sadyga and I.S. Usov: A Multiplexing Modem	19	42
I.I. Vakulenko, S.M. German and V.M. Sardyga: The UPS-2.4 Modem	23	45
PART 2		
RADIO ENGINEERING		
ELECTRONICS SYSTEMS AND CIRCUITS		
T.I. Arsen'yan: Microwave Attenuation Over Communication Links in an Intense Sand/Dust Atmospheric Aerosol	28	3
Ya. G. Brativnyk and I.S. Sorokevich: A Method of Increasing the Geometrical Accuracy in Reproducing TV Images	31	5
N.A. Potapov: The Accuracy with Which the Coordinates of Complex Objects Can be Measured in Noncoherent Systems	34	9
V.G. Grigor'yev: Parametric Estimation of Communication Reliability in a Tropospheric Radio Channel	37	11
V.I. Krotov and A.N. Levterov: A Gunn Diode Harmonic Oscillator Using a Disk Resonator	39	14
V.M. Katushkina, V.P. Malyshev and A.V. Shalapanov: Oscillation Stability in a Synchronized Oscillator Having an Additional Feedback Circuit	42	17
Yu. V. Berezin and I.P. Korotkov: A Four-Element Spatial Filter Which Suppresses Multibeam Interference	44	19
V. Yu. Zotov and V.D. Razevig: The Characteristics of Digital Detectors of a Packet of Noncoherent Pulses	48	23
A.A. Aleksanyan, V.A. Galakhov, V.L. Mozheyko, V.G. Moiseyev and K.K. Nikitin: A 200-W Medium-Wave Radio Broadcasting Key Transmitter	51	26
V.A. Neganov, N.G. Safronov and M.V. Terent'yeva: Nonreciprocal Ferrite Devices Based on a Field-Displacement Isolator	52	27
SIGNAL PROCESSING		
V.A. Suchilin: Increasing the Interpolation Accuracy for Digital Signals Using a Discrete Fourier Transformation	54	29
O.V. Gofayzen and A.V. Mindel': Formulas for Oblique-Angled Sampling of Multidimensional Messages	56	31
K.V. Filatov and A.L. Chernikhovskiy: An Analysis of Frequency Weighting in FM Signal Compression Filters	59	34
V.A. Senderskiy and V.V. Strokov: The Maximum Noise Immunity of a Channel without Memory with Optimal Noncoherent Reception of m-Position Orthogonal Signals	64	38
V.F. Odinokov and S.I. Kholopov: The Pull-In Range of a Phase-Locked Automatic Frequency Control System	67	40
G.A. Polyakov, S.S. Kuzin and E.A. Klyuyev: A Failure-Resistant Spatial Signal Processing Algorithm Based on a Whitening Filter	69	42
M.I. Zhodzishskiy, S.S. Nuzhnov and A.F. Silayev: Digital Reception of Binary Digits	72	45
A.P. Pavlyuk: Systematic Classification of the Criteria for Evaluating the Rationality and Efficiency of the Utilization of a Radio-Frequency Resource	75	48
ANTENNAS, WAVEGUIDES AND RADIOWAVE PROPAGATION		
Yu. L. Lomukhin, B.B. Damdinov and N.B. Chimitdorzhiev: Mutual Coupling of Antennas Placed Over the Rough Edge of a Half-Plane	80	52

	Page English	Russian
V.V. Kozlovskiy and A.V. Frolov: The Relationship between the Characteristics of Single and Coupled Nonuniform Lines.....	83	55
O.M. Tarasenko, D.D. Gabriel'yan and V.V. Shatskiy: Determination of the Characteristics of a Waveguide Adaptive Antenna Array Under Steady-State Conditions.....	85	57
G.A. Andreyev, S.G. Agratin, G.A. Gladyshev and O.K. Stankevich: Detection of Dielectric Anomalies in the Soil from the Reflection of LFM DMW.....	87	58
RADIOOPTICAL METHODS AND DEVICES		
A.P. Trifonov and T.M. Ovchinnikova: Asymptotically Nonparametric Optical Signal Detector.....	91	62
COMPUTERS AND MICROPROCESSORS IN RADIO ENGINEERING SYSTEMS		
Yu. V. Tkachenko, A.E. Neyfakh and A.E. Bondarev: A Microprocessor Implementation of a Packet Decoder.....	95	69
FOR THE ENGINEER		
Yu. M. Zel'din: Calculation of Active and Active-Passive Two-Impedance Microwave Devices.....	98	75
V.N. Gromorushkin, A.L. Dokuchayev and V.B. Kozyrev: Pseudo-Supplementary Cauer and Chebyshev Filters.....	101	77
M.I. Bocharov and O.P. Novozhilov: A Balanced Modulator Based on Synthesized Nonlinear Reactive Elements.....	103	80
V.G. Aleshin, L.A. Belov and I.L. Korolev: The Generation of PSK Signals in Function Generators.....	107	83
A.V. Salabay and D.V. Orlov: Implementation of a Viterbi Decoder of Reduced Word Size.....	110	86
I. Yu. Serboyakov: An Estimate of the Effectiveness of Using an Amplitude-Frequency Equalizer to Compensate Selective Fading on Digital Radio Relay Links.....	112	87
HISTORY OF ELECTRONICS		
N.N. Kuritsyna, N.I. Losich and E.N. Shoshkov: Russian Society of Radio Engineers (On the 70th Anniversary of Its Foundation).....	114	89
LETTERS TO THE EDITOR		
V.V. Kashinov: The Evolution of Efforts to Increase Potential Noise Immunity.....	116	91
G.N. Gromov: Signal Conversion by the Differential-Geometrical Method...	118	93

NUMBER 7

PART 1
TELECOMMUNICATIONS

RADIO COMMUNICATIONS

V.S. Tomskiy and B. Yu. Fitin: The Shape and Size of Radio-Reception Zone in Radio Communication Systems Using Airborne Repeaters.....	1	11
V.M. Rozov: Energy Parameters for a Zonal Communications Radio-Transmitting Center.....	6	18
D.D. Blokhin and V.B. Kozyrev: Construction of Broadband Tube Preamplifier SW Transmitters.....	9	20
L. Ya. Il'nitskiy, V.A. Ivanov and V.S. Bogdanov: A Procedure for Identifying Radio Channels Subject to Intermodulation Noise.....	13	23
V. Ye. Martirosov and A.P. Gus'kov: Optimal Synchronization Algorithms for Radio Signals with Unstable Frequency.....	18	26

	Page English	Page Russian
V.V. Bortnikov, V.S. Ivantsovskiy, A.V. Romanov and B.N. Klyasov: Effect of the Terminal Sensitivity of a Resolving Cricuit on Noise Immunity of Quasi-Coherent Spaced Reception	22	29
COMMUNICATION NETWORKS AND SWITCHING		
N.I. Artyukhin, A.V. Bashmakov, A.N. Velichko and P.A. Grigoryan: Development of Asymmetric Simultaneous Switching Circuits Based on 2 × 2 Switches	25	42
THEORY OF CIRCUITS		
G.N. Yergiyev and L.T. Ziangirova: Synthesis of Active RC-Filters with Fixed Maximum Quality of the Transfer Function Pole	29	48
A.I. Knyaz', V.M. Draganov and A.G. Lashko: A High-Frequency Strip-Line Resonator	33	51
A.T. Mingazin: Variation of Initial Parameters in Synthesizing Recursive... Digital Filters	35	53
PART 2		
RADIO ENINGEERING		
SECTION HEADING		
E.N. Voronin: Color Coding in Microwave Tomographs	38	3
A.L. Peysikhman: Error Probability in the Discrete Summation of More than Three Separated Signals with Fading	42	7
O.A. Shorin and M.V. Fedulov: Analysis of the Need for Spatial Adaptation of "Cellular" Mobile Radio-Communications Systems	45	9
A.S. Abyzov and B.N. Krylov: The Probability of the Correct Detection of Echo Signals When There are Ionospheric Perturbations	48	12
I.L. Korolev: The Design of Phase Error Meters for FM Signal Generation Systems	49	14
V.G. Spitsyn: Calculation of Radio-Wave Scattering by a Nonstationary Spherical Ionospheric Perturbation	52	16
RADIOELECTRONIC CIRCUITS AND DEVICES		
A.V. Ostreykovskiy: Features of the Low-Frequency Instability of Gunn Oscillators	54	19
S.S. Vdovin, S.E. Zirka, Yu. A. Zubkov and Yu. I. Moroz: Pulse Shape in a Modulator with an Unsynchronized Artificial Line and a Fixed-Type Switch	57	22
Yu. M. Bezborodov and V.N. Pochernyayev: A Method for Increasing the Selectivity of Bandpass VHF Filters	59	24
Al Khasanie Khisham: The Signal-to-Noise Ratio with Diode Detection	63	28
V.B. Tekshev: Parametric-Structural Synthesis of Broadband Microwave Amplifiers	66	31
SIGNAL PROCESSING		
S.S. Kuzin and D.I. Lekhovitskiy: A New Lattice-Type Filter Structure and an Adaptive Algorithm for Estimating Its Parameters	69	33
E.P. Is'kiv and V.K. Marigodov: Synthesis of Optimum Signal and Interference Structures in Detection Problems	73	37
S. Ya. Zhuk: Joint Filtering of the Parameters of Target Motion When There are Anomalous Measurements	77	40
A.K. Morozov: The Reliability of Recurrent Signal Reception with an Ideal Estimate of Channel Parameters	80	43
O.V. Golovin: Statistical Characteristics of the Time Distortion of Telegraph Signals	83	46
A.M. Brikker: Statistical Synthesis of Optimum Rank Signal Detection Algorithms with a Limited Sample Size	89	51
I.I. Markovich: The Uncertainty Function of Signals in Quasi-Optimum Processing in a Linear Filter with Variable Parameters	92	55

	Page English	Russian
ANTENNA-WAVEGUIDE TECHNIQUES AND RADIO-WAVE PROPAGATION		
V.A. Kaplun and V.M. Zelenkevich: Parametric Synthesis of the Walls of a Microwave Antenna Radome	95	57
V.V. Bodrov and A.S. Popkov: A Slot-Resonator Radiator Excited by a Coaxial Line	97	59
B. Yu. Kapilevich and S. Yu. Safonov: An Analysis of $E_{01\delta}$ Modes in a Beyond-Cutoff Waveguide-Ferrite Resonator	100	62
A. Yu. Andreyev, V.O. Kobak and V.V. Leont'yev: The Mean Effective Scattering Cross Section of an Oscillating Rectangular Plate Located at the Interface Between Two Media	103	65
RADIOOPTICAL METHODS AND DEVICES		
Ye. S. Avdoshin: A Fiber-Optic Displacement Detector	108	66
V.I. Shcherbak: Structural Analysis of Optimal Interference-Type Measuring Instruments	111	69
V.G. Shinkarenko and A.D. Karavayev: Calculation of the Optical Signal Power of a Laser Scanning Vision System	114	72
V.I. Kirillov and N.V. Tarchenko: A Comparative Analysis of Optoelectronic Receivers in Television Fiber-Optic Transmission Systems	116	74
I.V. Kalmykov and O.V. Kudryashov: A Method of Compensating the Nonlinear Distortions of Light-Emitting and Laser Diodes in Broadband Analog Communications Systems	119	77
COMPUTERS AND MICROPROCESSORS IN RADIO ENGINEERING SYSTEMS		
A.A. Lavrinovich, U.K. Yansons and G. Ya. Abotin-Abolin: An Application Program Package for Designing Band-Pass Filters Using Surface Acoustic Waves	123	80
S.M. Nikulin: The Measurement-Calculation Processes in Interactive CAD Systems for Microwave Devices	125	82
V.M. Bogachev, V.M. Demidov, B.A. Mishustin, V.D. Razevig and A.A. Turkin: A Program Package for the Circuit Design of Radio-Electronic Devices	128	85
FOR THE ENGINEER		
Yu. D. Kozlyaev and S.P. Lovchikov: The Balancing of Full-Wave Converters	131	90
V.S. Andreyev and V.A. Toropin: Multidode Microwave Generators and Methods of Increasing Their Reliability	134	93
Z.I. Model on His 90th Birthday	137	96

NUMBER 8

PART 1		
TELECOMMUNICATIONS		
MULTICHANNEL RADIO COMMUNICATIONS		
D.R. Ankudinov, and S.L. Portnoy: Probability Decoding of Majority Codes Matched with APM Signals	1	13
Ya. D. Khatskelevich, V.V. Berezkin and A.A. Egorov: Noise-Immunity of FM-4 Signals with Coding in a Nonlinear Channel with Memory	7	17
K.A. Badalov: Normalization of the Values of Power Flux Density Produced by Geostationary Satellites	12	21
TELEVISION		
O.V. Gofayzen, I.P. Panfilov and V.V. Skopenko: New Measuring Signals for Controlling Distortions in Television Channels	18	4
V.M. Gel'fand: Methods of Synchronous Detection in TV Demodulators and the Properties of Evaluating TV Transmitter Parameters	28	12

	Page English	Russian
FIBER-OPTIC COMMUNICATIONS LINES		
V.V. Shitov, V.F. Chuprakov, R.A. Nekhorosheva and N.M. Kononova: Effect of Negative Temperatures on Optical Fibers with Polymer Coatings.....	35	37
ELECTRIC POWER SUPPLY		
V.I. Gurevich: Enhancing Reliability of Electric Power Supply of Unattended Stations in Tranmission Systems.....	40	47
V.I. Khandogin and A.V. Raykova: Analysis of Characteristics of Transformers with Amorphous High-Permeability Alloy Magnetic Circuits.....	43	50
GENERATION, CONVERSION, AND AMPLIFICATION OF SIGNALS		
O.V. Varlamov, I.A. Goncharov and V.G. Lavrushenkov: High-Power HF Digital-Analog Converter for SSB Signal Power Amplifiers.....	49	54
V.A. Suchilin: Nondistorting Frequency Separation of Digital Signals.....	54	58
PART 2 **RADIO ENGINEERING**		
V.I. Merkulov and B.G. Tatarskiy: A Modified Optimal-Control Algorithm for Radioelectronic Tracking Systems Based on a Generalized Performance Minimum Criterion.....	57	3
M.V. Krutikov, R.R. Muzafarov and M.I. Rodionov: Tropospheric Fluctuation Error of Ranging Measurements on Oblique Maritime Routes.....	61	6
V.N. Manzhos, V.N. Kokin and A.A. Boyarov: Direction Finding of Signal Sources in a Small-Base Active Detection and Ranging System.....	63	8
G.S. Markaryan and K.M. Nikogosyan: A Method of Increasing the Noise Immunity of Line Signal Regeneration in Digital Transmission Systems.....	68	14
Yu. F. Korobov and M.G. Golovchinskiy: Communications Reliability in Mobile Repeater Systems.....	71	17
ELECTRONIC CIRCUITS		
E.S. Poberezhskiy and M.V. Zarubinskiy: Sample-and-Hold Devices Employing Weighted Integration in Digital Radio Receivers.....	75	22
S.S. Bondarenko, V.A. Borodayev and E.R. Rudavin: A Transistor Frequency-Tunable Self-Excited Oscillator.....	79	26
A.A. Aleksanyan, V.A. Galakhov and V.G. Moiseyev: Effect of Quasisaturation on the Switching of Bipolar Power Transistors.....	81	28
V.N. Mitrokhin: The Excitation of a Tapered Waveguide.....	84	31
V.P. Sizov: Modification of an Optimum Linear Filtering Algorithm by the Difference Measurement Technique.....	87	34
Li Za Son: Optimization of Noise-Immunity Parameter Requirements for a Radio Receiver.....	90	37
S.A. Trushlyakov and Yu. S. Shmaliy: Effect of Equivalent Losses in a Quartz Resonator on Oscillation Excitation in Self-Excited Oscillators.....	95	41
A.A. Semkin: Proceedings of the All-Union Scientific and Technical Seminar on "Integrated Filtering Devices".....	98	44
A.A. Zvyagintsev, N.A. Kovaleva, Yu. P. Yurchenko and A.G. Yushchenko: The Spectral Properties of a Dielectric Rod in a Cavity of Elliptic Cross-Section.....	99	45
SIGNAL PROCESSING		
A.N. Dmitriyenko and A.A. Novotorov: Optimum Nonparametric Signal Detection in the Case of an Independent Sample.....	100	47
V.V. Ivanov and T.S. Zhutyaeva: Angle Discrimination Algorithms in Coherent Pulse Operation in the Presence of Correlated Interference.....	104	51
A.A. Zelenskiy, V.F. Solodovnik, V.N. Khristoforov and V.A. Shevelev: Structural-Parametric Optimization of Multifrequency Piezoelectric Devices.....	107	54

	Page English	Russian
S.I. Zakharov: Asymptotically Optimum Estimates of the Parameters of Discrete Random Processes and Their Applications	110	57
S.N. Vorob'yev: Nonlinear Deterministic Signal Detection	114	62
A.A. Volkov: Modulation, Adequate for a Doppler Frequency Shift	118	65
V.M. Mel'nikov: The Frequency of the Maxima of a Radar Signal Scattered by a Multiple Target	120	67
A.V. Zyul'kov: Statistical Characteristics of Certain Parameters of a Sample of a Random Process	123	70
ANTENNA-WAVEGUIDE ENGINEERING AND RADIOWAVE PROPAGATION		
D.I. Lekhovitskiy, I.D. Rakov and V.M. Dankevich: Adapative Protection from Interference in Equidistant Antenna Arrays	126	73
V.F. Balakov, V.S. Buryak, I.K. Gabeyeva, L.N. Kratskin, A.M. Leonov, V.A. Mayorov, V.S. Puchkov, V.F. Radchenko, and V.N. Fomin: The Use of a Mode Separator and Ferrite Converters to Analyze Side Oscillations in Waveguide Channels	131	78
M.V. Kornikov, N.V. Kalashnikov, A.V. Runov, O.A. Yurtsev and P.N. Pavlov: A Numerical Electrodynamic Analysis of Arbitrary Wire Antennas	135	82
RADIOOPTICAL METHODS AND DEVICES		
A.A. Bortsov, V.V. Grigor'yants and Yu. B. Il'in: Effect of the Light-guide Excitation Efficiency on the Frequency of a Self-Excited Oscillator with a Differential Fiber Optic Delay Line	137	84
Yu. V. Vaysleyb, V.N. Goncharov and M.N. Kovachevich: Frequency Characteristics of Semiconductor Injection Lasers with Microwave Modulation	142	89
COMPUTERS AND MICROPROCESSORS IN RADIO SYSTEMS		
I.P. Norenkov and Yu. A. Evstifeyev: Embedded Integration of Multiperiod Systems and Its Use to Model Processes in Quartz Oscillators	146	93
P.P. Mal'tsev: Interface LSI Chips for Digital Data Processing Systems	150	97
FOR THE ENGINEER		
Yu. M. Zel'din and V.N. Shkalikov: Phase Characteristics of a Gunn-Diode-Locked Oscillator	152	102
V.S. Levinzon: Analysis of Fault Conditions in DC Voltage Converters	154	104
T.Z. Zhemaytis, K.A. Breyve, Z.I. Bliznikas and P.-Yu. P. Zhilinskas: Compensation of Crosstalk Distortion in Matrix Photocell Converters	157	107
V.P. Postyushkov: Time Cost Analysis for Radio Link Parameter Control	160	110

NUMBER 9

PART 1
TELECOMMUNICATIONS

LONG DISTANCE TELEPHONE

A.Z. Kvaktunov and Yu.L. Imas: Computer Traffic Route Analysis of Intercity Telephone Communications	1	26
V.K. Steklov, S.M. Gorbunov, and Yu.V. Yankovskiy: Quality Control of Intercity Communications at the Kiev Intercity Automatic Telephone Exchange	3	27
DECAMETER WAVELENGTH BROADCASTING		
S.I. Kvasnikov, V.N. Komarov, B.I. Kuz'min, and V.A. Mazepa: Pulsed Interference Control in Decameter Radio Communications Systems	7	38
Yu.A. Chernov: Field Intensity Along Decameter Routes for Various Transmitting Antennas	10	41

	Page English	Page Russian
O.V. Golovin: Simulation of a DM Radio Communications System Including a Repeater Station	19	48
MULTICHANNEL WIRE COMMUNICATIONS		
V.D. Nedil'nichenko: Length of the Regeneration Section When Using a Nonlinear Correction	23	51
E.I. Tabachnik: Investigation of the Possibility of Using Rubidium Frequency Standards in Digital Networks	27	54
Ye.I. Breyman and V.Ya. Odesskiy: Methods for Remote Control of Nonlinearity in Linear Analog Transmission System Channels	29	55
PART 2		
RADIO ENGINEERING		
A.I. Goron: Pulsed Recording by Conductor Heads	33	3
A.I. Yermakov and V.V. Solov'yev: Effectiveness of Decentralized Adaptive Control of the Frequencies in a Group of Mobile-Service Radio-Electronic Media	37	7
V.A. Yefimov, A.P. Sadovnikov, and S.Yu. Terebulin: The Removal of Range-Measurement Uncertainty When Detecting Moving Objects by Pulsed Doppler Radar	39	10
E.I. Tochitskiy, V.F. Surganov, G.G. Gorokh, and A.M. Mozalev: Thin-Film Capacitors with a Dielectric of Porous Anodic Aluminum Oxide	42	13
S.G. Krutchinskiy, Yu.I. Ivanov, and I.Ya. Krikun: A Method of Broadening the Dynamic Range of Multiloop Polynomial Arc Filters	44	15
G.V. Osipov and V.D. Shalfeyev: Dynamics of a Chain of Mutually Coupled Phase-Locked Systems	50	21
A.S. Rozhnov: Analysis of Nonreciprocal Power Splitter/Adders	53	23
I.V. Sukhorukov and N.N. Kazandzhan: Conversion of the Noise Parameters of Microwave Transistors	56	27
Ya.I. Lepikh and P.A. Snegur: Measurement of the Electrophysical Parameters of Piezoelectric Acoustic Lines	59	30
SIGNAL PROCESSING		
I.I. Gorban: Fast Space-Time Signal Processing for Mobile Arrays	63	34
M.V. Gitlits and S.V. Bobrovnikov: Nonstationary Signal Sampling Frequency Conversion Errors	66	37
S.N. Eliseyev: Effective Implementation of Multichannel Digital Filters	69	40
V.I. Kostylev: Space-Time Processing of Weak Signals in Controlled-Resolution Radio Image Formation	73	44
V.A. Saprykin and S.I. Tynyankin: A Three-Parameter Model of a Signal	75	47
D.M. Vavriv and I.Yu. Chernyshev: Dynamic Chaos in the Synchronization of Tuned Oscillators by an Amplitude-Modulated Signal	77	48
S.G. Zhukov: Analysis of the Noise of Digital Filters Employing Bit Signal Processing	80	51
V.A. Dvinskikh: Determination of the Parameters of Periodic Digital Signal Components	83	54
DEPOSITED PAPERS		
V.V. Solodeev: Analysis of Pulse Modulation Signal Conversions	85	56
D.G. Kozlov: Minimax Reception of Broadband Signals Against an Incoherent Interference Background	86	57
ANTENNA-WAVEGUIDE AND RADIO-WAVE PROPAGATION		
A.F. Chaplin, B.V. Koval, and M.I. Pavlikevich: Nonequidistant Broadband Filters and Transformers	88	59
M.A. Shakirov: A Diakoptical Approach to Calculating Strip Waveguide Parameters	91	62

	Page English	Russian
V.I. Ponomarenko, V.N. Berzhanskiy, and D.I. Mirovitskiy: Matching of a Layered Magnetogyrotropic Structure Over a Waveband	96	67
Ye.V. Zakharov, Yu.V. Pimenov, and M.Yu. Chervenko: A Numerical Method of Analyzing the Diffraction of an H-Polarized Plane Wave by a Periodic Grating	98	69
FIBER OPTICS		
N.A. Litsarev and A.A. Filitsin: The Interference Immunity of Fiber-Optic Communications Links under Conditions of Intersymbol Interference	103	73
V.F. Strel'chenok and A.V. Shostak: Local-Area Single-Channel Ring Fiber-Optic Digital Network	106	76
Yu.V. Kolesnichenko: Optical-Fiber Lightguides with Two Noncircular Cores	109	79
USE OF COMPUTERS IN COMMUNICATIONS		
Yu.N. Kirilenko: A Modification of Optimum Filtering Algorithms for Microprocessor Implementation	112	81
FOR THE ENGINEER		
M.G. Rubanovich, I.A. Zotov, and S.A. Gladkevich: A Pickup of Pulse Length Excess	116	88
V.P. Konyayev and M.V. Eynasto: Effect of the Illumination Conditions and Form of Contact on the AFC of a Photodiode	118	90
I.M. Simontov: Efficient Arrangement of Electronic Regulators in the AGC Systems of Radio Receivers	122	93
Yu.P. Sbitnev: Intermodulation Properties of Two-Channel Amplifiers	123	94
V.S. Mostyko and A.V. Rozov: A Microcircuit Amplifier with a Variable Passband	126	97
O.A. Yefimov, V.D. Vogman, and A.L. Asinovskiy: Calculation of the Basic Parameters of a Half-Wave Resonance Voltage Converter	129	100
A.N. Sidnev and A.B. Zuyev: A Nanosecond Pulse Packet Generator with High Repetition Frequency	132	103
V.S. Yanovskiy: An Analog-Digital Converter with a Large Dynamic Range	135	105
V.S. Bogdanovskiy and N.I. Okulich: A Digital-to-Analog Converter with a Logarithmic Transfer Characteristic	137	107

NUMBER 10

PART 1
TELECOMMUNICATIONS

SWITCHING. DATA TRANSMISSION

S.I. Samoylenko: Asynchronous Adaptive Switching	1	27
L.K. Kiselev: Calculation of Reliability for Multichannel Data Transmission Circuits	7	31
A.A. Mironov and V.A. Ershov: The Average Number of Attempts to Establish a Connection in Switching Nodes	11	34
V.P. Zhokh: The "Voltmeter-Ammeter" Method for Determining the Location of a Fault in the Insulation of a Communications Line	16	44
SATELLITE COMMUNICATIONS		
L.G. Gassanov, Yu.F. Konovalov, B.A. Lokshin, V.V. Petrov, V.M. Tsirlin, G.G. Tsurikov, and Ye.Ya. Chekhovskiy: The "Moscow-Global" Satellite Television Receiving Station	20	2
G.B. Askinazi and O.A. Tulub'yeva. Design of Economically Efficient Satellite Communications Networks	26	7

	Page English	Page Russian
TELEVISION AND BROADCASTING		
M.I. Krivosheyev and V.P. Dvorkovich: Characteristics of Measurements in High-Definition Television	31	11
V.N. Akhtyrskiy, N.Ye. Fadeyeva, T.V. Mineyeva, and I.V. Nosov: A New Approach to Planning of Television and Sound Broadcasting Networks	39	18
M.G. Andriescu, S.M. Vernik, G.N. Krasavtsev, and B.K. Nikitin: Analysis of a Channel Model of Influence of Radio Broadcasting Station Fields on Cable Communications Lines	43	21
MULTICHANNEL COMMUNICATIONS		
K.E. Zaslavskiy: Synthesis of a Decoupler with Specified Amplitude-Frequency Characteristic Coefficient between Energy Linked Terminals	49	37
SIGNAL TRANSMISSION THEORY		
P.P. Kravchenko: High-Performance Delta-Modulation Algorithms Optimized for High-Speed Response and Accuracy	54	44
DATA TRANSMISSION		
Ya.A. Kacherovich: Separation of Asynchronously Transmitted Coded Messages over Channels with Interference	60	48
E.F. Shcheglova: Transmission of Digital Messages by Multichannel Modems with Frequency Adaptation	66	52
V.A. Bogatyrev and N.V. Dobatkina: A Method for Determining the Probability of Distortion of Data Blocks in Channels with Correlated Errors	70	55
PART 2		
RADIO ENGINEERING		
RADIO SYSTEMS		
N.I. Kalashnikov and K.A. Badalov: Effect of Interfering Signals from Geostationary Artificial Satellites on Ground Digital Radio-Relay Links	72	3
L.Ye. Varakin and V.N. Trubin: Effectiveness of a Quasisynchronous Cellular Mobile Communications System	75	6
N.A. Krotov: Complex Radar Signals for Observing Distributed Objects and a Multitarget Situation in the Case of Ambiguity in the Range-Speed Measurements	78	8
P.G. Taranenko: An Ensemble of Nonlinear Sequences with Locally-Optimal Correlation Properties	81	12
K.G. Papushin and N.I. Neilo: Spatial Characteristics of a Synthesized-Aperture Radar in the Case of Strict Limiting of the Input Signals	83	14
I.D. Gorbenko and Yu.V. Stasev: Derivative Signal Systems and Their Properties	86	16
RADIOELECTRONIC SYSTEMS AND DEVICES		
M.I. Nesterov and V.S. Rozanov: A Statistical Equivalent of the Effect of Amplitude and Phase Imbalance on the Summation of Powers in Transistor Amplifiers	88	19
S.A. Belichenko: Optimal Mode of Operation of a Single-Cycle Switch Generator with a Filter Load	91	22
S.I. Ziyenko: The Amplitude and Time Characteristics of Semiconductor Diodes with Dielectric Relaxation under Conditions of High-Voltage Cutoff	93	24
G.N. Anikeyenko and V.D. Luk'yanchikov: Optimal Control of the Power of a Transmitter in Communications Systems with Repeated Frequency Utilization	98	28

	Page English	Page Russian
V.M. Chilikin: Statistical Equivalent of a Digital Phase Detector with a Relay Characteristic	101	30
M.A. Nikolayev: Electrodynamic Analysis of Coupled Microstrip-Slot Resonators	104	33
Ya.I. Lepikh and A.N. Kalashnikov: Optimization of Apodized Interdigital Transducers of SAW Devices	107	35
A.V. Bezrukov: Refined Analysis of the Transient and Steady-State Modems in Simple and Balanced Phase Detectors	109	37
I.I. Goray and S.A. Mosiyenko: Synthesis of Optimum Four-Pole Networks on an Arc-Basis	110	38
SIGNAL PROCESSING		
V.N. Manzhos, V.N. Kokin, I.N. Kamchatnyy, and A.A. Belov: Investigation of the Effectiveness of Intermodular Spatial-Temporal Processing of Signals Allowing for Their Group Delay	111	40
Yu.D. Bolmusov: An Estimate of the Index of Parasitic Phase Modulation due to Amplitude-to-Phase Conversion in the Stages and Channels of Radio-Electronic Equipment	114	43
D.I. Kryukov and G.A. Khvostik: Searchless Detection of a Continuous-Phase FSK Signal	117	46
V.S. Girshov: Noise Immunity of Multiposition PSK Signals in Channels with Three-Parameter Fading	119	49
Yu.G. Bulychev and K.A. Chasnyk: Solution of Estimation Problems Using a Spline Approximation of the Correlation Function of Noise	122	51
A.A. Tolkachev, O.V. Ampilov, E.B. Volochkov, V.N. Garmash, M.M. Zolotarev, and V.F. Puzankov: Effect of an Ideal Limiter on LFM Signal Resolution	124	53
M.S. Lokhvitskiy: Investigation of the Convergence of Self-Learning Algorithms for Estimating Pulsed Response Parameters	126	55
A.N. Bondarev, M.I. Zhodzishskiy, and S.Yu. Sila-Novitskiy: Analysis of Power Losses in Digital Pseudonoise Signal Receivers	128	57
V.G. Tsiporenko: The Choice of the Signal Sampling Frequency and Parameter Calculation in Digital Radio Receivers	129	58
V.P. Tuzlukov: Interference Compensation in Signal Detection for a Signal of Arbitrary Amplitude and Initial Phase	131	59
D.L. Burachenko and V.F. Erokhin: Potential Noise Immunity of a Digital Signal Demodulator with Structural Intermittent Interference Compensation	132	61
ANTENNAS, WAVEGUIDES AND EM PROPAGATION		
T.L. Gruzinskaya, G.G. Tsurikov, and V.G. Yampol'skiy: Dielectric Support STructures for Mirror Antennas	134	63
V.M. Zinevich and G.D. Mikhaylov: Influence of Mutual Coupling between Radiators on the Spectral Characteristics of an Antenna Field	140	68
R.I. Rumyantsev: The Use of Digital Filtering to Reduce Random Errors in Antenna Measurement Systems	143	71
Yu.A. Chernov, N.N. Bulatova, and A.U. Zhil'tsov: The Azimuthal Field Distribution Far from a Shortwave Transmission Antenna	146	74
V.M. Petrov and V.A. Tabatskiy: Features of Moving Target Detection by a Diversity Antenna System on a Background of Atmospheric Precipitation Clouds	150	78
RADIO-OPTICAL METHODS AND DEVICES		
V.V. Shevchenko: Quasiplane-Parallel Modes in Anisotropic Optical Fibers	154	82
A.A. Vizner: Recurrent Coding in an Optical Data Transmission Channel	158	86
COMPUTERS AND MICROPROCESSORS IN RADIO SYSTEMS		
A.I. Tyazhev, E.A. Akchurin, A.M. Glotov, and E.V. Koz'yakov: Digital Filter Design	162	90

	Page English	Russian
FOR THE ENGINEER		
V.Ya. Groshev: An Analysis of the Operation of Operational Amplifiers with Various Types of Input Stages Under Large-Signal Conditions	166	96
V.V. Anishchuk: A Simple Method of Measuring the the Permittivity of Materials in the Microwave Band	169	99
G.P. Alekseyev: Current Regulation by Means of Trinistor Two-Terminal Networks	172	102
A.S. Makarov: An Overload Protection Device for a Micropower Digital Voltmeter Input	175	105
D.V. Igumnov and S.N. Shcherbakova: Voltage Division by Means of MOS-Transistors	177	107
A.Ye. Kal'noy: Calculation of Cyclical Shifts in M-Sequences	179	109

NUMBER 11

PART 1 TELECOMMUNICATIONS		
RADIO BROADCASTING		
M.V. Gitlits, A. Yu. Zelenin and O.B. Popov: Interdependence of Design Parameters in Digital Radio Broadcasting Networks	1	18
V.G. Buryak and T.G. Khvilivitskiy: Higher Harmonics in a Common Grid Valve Oscillator	5	21
PROPAGATION OF ELECTROMAGNETIC WAVES		
V.N. Troitskiy, Yu. I. Petrushko, B.P. Meshchertskiy (USSR), R. Vlakhova, V. Ivanov, N. Mollov and I. Nikolov (Bulgaria): The Ultra Long-Range Propagation of Meter, Decimeter and Centimeter Radiowaves Over the Sea	8	23
A.A. Shur and B.F. Mel'nikov: Propagation of VHF Radiowaves over a Warm Sea	13	27
SWITCHING AND COMMUNICATIONS NETWORKS		
I.G. Malkenzon and A.I. Bogomolov: Nonoperative Routing of Channels and Circuits in a National Primary Network	16	30
B.I. Polyanskiy and V.I. Lifshits: A Method for Adjusting the Attenuation-Frequency Characteristics of Component Network Channels by Sections with Frequency Shifts	21	34
A.V. Nesterova and Nguyen Le Khang: Zoning of City Telephone Networks in Long-Term Planning	24	36
COMMUNICATIONS LINKS		
M.F. Popov, M.D. Khodakovskiy and G.V. Kobzev: Mechanical Characteristics of Quartz Optical Fibers	28	46
A.D. Ionov: The Influence of Random Nonuniformities on Mode Conversion in a Graded Fiber	32	49
V.F. Sitnikov and L.L. Khruslov: The Opto-Magnetic Principle in Regulating Switching Stabilizers	35	53
Yu. D. Kozlyaev and S.P. Lovchikov: Determination of Stability Conditions for Pulsed Electrical Power Supply Systems	38	55
PART 2 RADIO ENGINEERING		
A.N. Katulev and V.V. Tukhvatulin: Control of Direction-Finder Motion in Angle-Measuring Systems	42	3

	Page English	Page Russian
G.I. Skrypnik: Radar Resolution of Targets by the Potential Function Method	45	6
M.E. Il'chenko and A.V. Zakharov: Harmonic Suppression in Variable-Capacitor-Tuned Oscillatory Systems	49	9
A.P. Pirkhavka: Automatic Phasing of a Multichannel Circuit with Respect to a Common Reference Signal	52	12
N.M. Ashimov: The Relation between the Amplitude-Frequency and Phase-Frequency Responses of a Linear System	54	14
V.M. Koshevoy and S.T. Tarabuev: Effectiveness of Partial Coherent Filtering Systems	57	17
M.B. Khaletskiy and V.A. Virkovskiy: Analysis of Amplitude-Phase Signal Distortions in the Reproduction of Code Combinations by Loop and Thin Film Magnetic Heads	62	21
RADIOELECTRONIC CIRCUITS AND DEVICES		
V.A. Suchilin: A Digital Inversion Filter Design Algorithm	66	26
V.B. Antipov: An Effective Algorithm for Calculating the Steady-State Conditions of a Network with a Nonlinear Capacitance	69	28
A.G. Alekseyev and G.V. Voyshvillo: Classification Characteristics of Combined Feedback in Amplifiers	71	31
A.V. Krivosheykin and M.G. Moshkovich: Analysis of an FM IF Amplifier in Integrated-Circuit Form	74	34
V.E. Prozorovskiy: Modeling of a Stepped-Dielectric Charge-Coupled Device	77	36
M.I. Kirillov: Automatic Frequency Control of an Oscillator with a Gyromagnetic Resonator	80	39
E.G. Zuev: Effect of Internal Feedback on the Input Reflection Coefficient of a Transistor under Nonlinear Conditions	82	41
SIGNAL PROCESSING		
E.P. Metsner, I.V. Lebedev and T.V. Kosovets: Investigation of a Cavity-Type Microwave Discriminator Operating on the Sideband Spectral Component of a Microwave Signal	84	43
V.M. Shlyakhin: Operating Characteristics of an Optimum Detector of Non-Gaussian Signals on a Background of Weak Noise	87	45
K.V. Tuzov: Models of Electromagnetic Lightning Pulses and an Electrostatic Discharge	89	48
K.A. Semenov and A.I. Antonov: A Quantitative Estimate of the Effectiveness of an Adaptive Algorithm for Selecting Block Length in Data Transmission Systems	91	50
I.E. Bocharova and F.A. Taubin: PM Signal Transmission over a Channel with Fading and Scattering	93	52
L.N. Anisimova and A.P. Koldanov: Unbiased Digital Signal Detector Operating on an Interference Background	97	55
A.M. Kovalev and V.I. Meykshan: Analysis of the Performance of a Group of Unreliable Channels for the Case of Unreliable Real-Time Operational Monitoring	98	56
O.V. Gofayzen, T.D. Kryukova, M.G. Lokshin, B.M. Pevzner, V.V. Skopenko and A.V. Shishkin: Models for Estimating Channel Linear Distortion in the SECAM Color Television System	101	59
ANTENNA-WAVEGUIDE ENGINEERING AND RADIO WAVE PROPAGATION		
V.A. Kravtsov, G.V. Kravtsova and O.A. Ulasik: The Excitation of an Elliptical Cylinder by Slot Antennas	103	61
N.L. Petkevich and A.G. Kurashov: The Information Capacity of Synthesized-Aperture Radars in Mapping Problems	108	65
Ye.L. Kazakov and Yu. A. Kavin: Effect of Deviation of a Phased Antenna Array Beam from the Geometric Axis of the Antenna on the Polarization Structure of the Field of the Emitted and Received Signals	113	71
A.M. Donets, V.N. Fedosov and L.S. Ochneva: Magnetic Characteristics of Ferrite Rods in the Region of Magnetic Dispersion Frequencies	116	73

	Page English	Page Russian
RADIO-OPTICAL TECHNIQUES AND DEVICES		
I.V. Zelenyak-Kudreyko, V.N. Korshunov and S.N. Ksenofontov: The Strength of Quartz Optical Fibers Under Random Mechanical Loading.....	119	76
V. Sh. Berikashvili, R.R. Lor'yan, L.V. Nikolayev and V.N. Pankratov: A Monomode Optical Fiber Which Preserves the Polarization Due to Core Ellipticity.....	123	80
E.V. Matsnev: Investigation of the Line Channel Characteristics of Duplex Optical Communications Systems.....	127	84
COMPUTERS AND MICROPROCESSORS IN RADIO SYSTEMS		
V.A. Nikol'skiy and E.L. Gamkrelidze: Formulation of a Normalized Model of a Microprocessor-Based Radio Equipment Monitoring and Testing System.....	130	86
FOR THE ENGINEER		
Ya. T. Zagorskiy, B.R. Ivanov, A.S. Makarov and N.I. Tsybulenko: A Low-Power DC Digital Voltmeter/Ammeter.....	133	89
V.A. Kaplun and V.G. Kulish: Equivalent Circuits for Calculating the Radio Parameters of an Array of Dissipative Dipoles in a Dielectric Layer.....	135	91
L.G. Zotov and A.A. Shorin: A Cascade Transformerless Converter for a Decentralized Electric Power Supply System.....	139	95
V.I. Golubev: A Transformer Power Supply with Low Nonlinear Distortion..	142	98
M.M. Shakhmayev: A Frequency Divider.....	146	101
S.K. Ogandzhanyan and V.B. Bespalov: A Broadband 3-dB Power Divider with Antiphase Outputs.....	149	104
G.B. Gol'fel'd and N.N. Bogdanov: Effect of the Q-Factor on the Fluctuation Spectrum in a Resonant Inverter.....	150	105
I.F. Gavrilenko: A Method of Isolating a Pulsed Signal.....	153	107
V.M. Stechenko: Calculation of RF Transistors for Minimum Insertion Loss	157	110

NUMBER 12

PART 2
RADIO ENGINEERING

ELECTRONIC SYSTEMS

	Page English	Page Russian
S.V. Novakovskiy and I.R. Mamedov: Dependence of the (Permissible) Phase Fluctuations of a Digital Video Signal on the Background Brightness of the Image.....	1	3
N.I. Smirnov and V.S. Kuznetsov: Optimization of Asynchronous Systems with Code-Division Access of Subscribers Combining the Use of Spread-Spectrum Signals and Noise-Immune Encoding.....	3	5
V.A. Yefimov, A.P. Sadovnikov, and S.Yu. Terebulin: A Detection and Single-Valued Measurement Algorithm Using the Estimate of an Energy Parameter.....	7	8
N.G. Sviridov: Assessment of the Effectiveness of Optimum Aperture Correction of a Video Signal.....	10	11
Ye.Ya. Marchenko, S.V. Fedorov, and V.V. Isakevich: Some Results of Investigations of Long-Distance Tropospheric Radio Communication on Central European Routes.....	13	14
I.D. Vul'man: A Principle for Validating the Optimum Structure of a System to Meet Reliability and Efficiency Requirements.....	16	16
V.M. Bogachev and A.D. Sazonov: Application of the Method of Volterra-Picard Spectral Series to the Analysis of Nonlinear Oscillatory Systems	20	20

Technology & Science

	Page English	Page Russian
P.V. Klibova and A.G. Alekseyev: Analysis of the Amplitude-Frequency Responses of Devices Based on Operational Amplifiers with Internal Compensation	25	26
L.N. Laut and S.M. Smol'skiy: Stability of Synchronous States in Self-Excited Oscillators with Diode Amplitude Stabilization Networks	27	28
A.V. Zadubrovskiy: Determination of the Locking Band of a Phase-Locked System by the Harmonic-Balance Method	32	32
M.I. Maksimenko and A.A. Chertkov: A Combined Frequency Synthesizer System with Identical Frequency-Conversion Sections	35	34
S.A. Lavlinskiy and A.G. Ostapenko: Design of Elliptical Digital Filters with Controllable Amplitude-Frequency Responses	37	37
Ya.T. Zagorskiy: Material Consumption and Cost Efficiency Factors When Reducing the Power Redundancy of Independently-Powered Electronic Measuring Instruments	40	39
A.M. Brigidin, N.I. Listopad, and M.N. Yurkov: AM-Signal Synchronization of Microwave Oscillators	43	42
M.I. Zhodzishskiy, S.O. Zuyev, and S.Yu. Sila-Novitskiy: Analysis of AFC Hardware-Software Systems	45	44
SIGNAL PROCESSING		
A.G. Shlionskiy: Radio Echos with Multisecond Delays	48	46
A.M. Shloma and M.G. Bakulin: Nonlinear Filtering of Markov Processes with Respect to Indirect Variables	51	49
Yu.P. Ozerskiy and V.D. Pavlov: A Comparative Estimate of the Effectiveness of Three Procedures for the Parallel Search for a Pulsed Signal	57	55
L.S. Levin: Code Group Formation Probabilities in a Random Binary Sequence	59	57
ANTENNA-WAVEGUIDE TECHNIQUES AND RADIO-WAVE PROPAGATION		
Ya.N. Fel'd: Direct Methods in Antenna Theory	63	61
E.F. Korolev: Calculation of Atmospheric Errors in Phase Radiosystems	70	68
V.P. Petrenko: Design of a Broadband Microwave Switch	75	73
Ye.N. Korostyshevskiy and G.A. Polukhin: Selection of Module Dimensions for an Antenna Array with a Hexagonal Aperture	77	75
RADIOOPTICAL METHODS AND DEVICES		
O.A. Stetsenko: An Algorithm for Analyzing Graded Planar Waveguides	80	78
V.G. Shinkarenko and A.D. Karavayev: Space-Spectral Analysis of a Scanning Laser System Which Forms a Long-Range Image	84	82
M.Yu. Yegorov and M.A. Belov: Properties of a Toroidal Dielectric Resonator	87	85
M.Ye. Belkin and M.V. Eynasto: Measurement of Photodiode Frequency Characteristics by Means of a Physical Equivalent Circuit	91	88
V.G. Kartashev, S.V. Kuz'min, and V.L. Skachkov: A Matrix Theory of Surface Acoustic Wave Pattern-Forming Networks	94	91
COMPUTERS AND MICROPROCESSORS IN RADIO SYSTEMS		
E.M. Manukyan: Integrated Programmable Logic Array Triggers	99	96
FOR THE ENGINEER		
V.N. Kotlyarov: Power Design of Class B Transistor Power Amplifiers with a Variable Load	103	100
V.K. Lipskiy and A.Ye. Moshinskiy: Noise Matching of a Single-Loop Frame Antenna with a Preamplifier	106	102
B.R. Ivanov: A Micropower Integrating Converter of Voltage into Time Interval	108	104